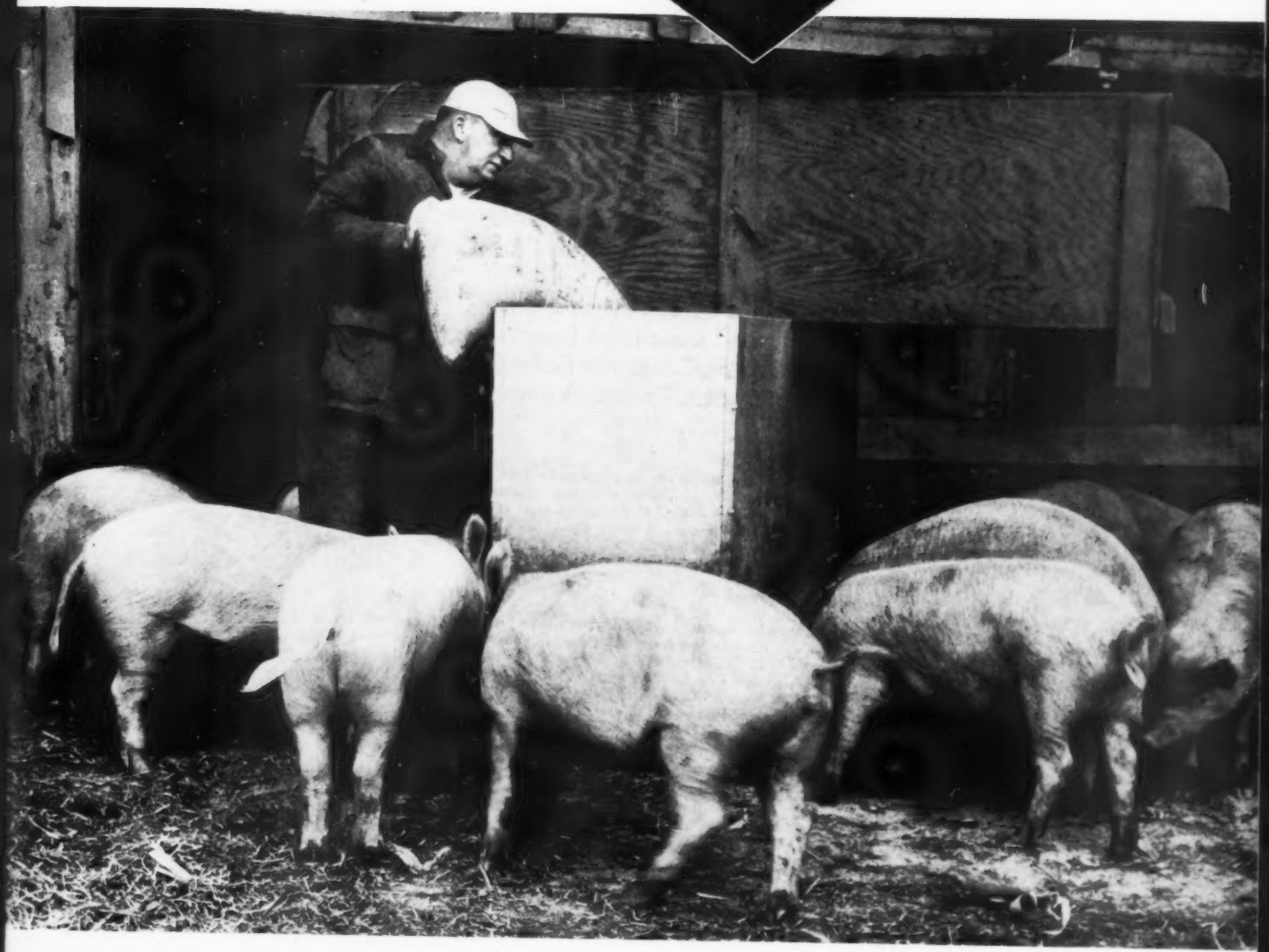
agricultural marketing

MARCH 1961



Spring Pig Crop

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

agricultural marketing

Volume 6, Number 3

Contents

March 1961

Cover page

By the time these pigs are ready for market—in June or July—prices probably will have curved slightly upward. Later, when slaughter supplies come from early spring pigs, hog prices will advance seasonally. If the spring crop amounts to no more than early forecasts, the seasonal fall decline in prices should be about normal. This would mean that farmers will get somewhat less for their hogs this year than last.

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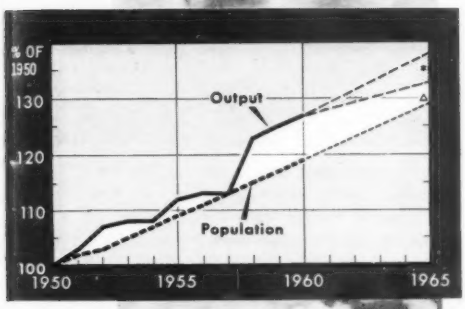
AGRICULTURAL MARKETING is published monthly by the Agricultural Marketing Service, United States Department of Agriculture, Washington 25, D. C. The printing of this publication has been approved by the Bureau of the Budget, March 18, 1959. Yearly subscription rate is $1.50, domestic; $2.25, foreign. Single copies are 15 cents each. Subscription orders should be sent to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.



U. S. FARMERS SET NEW PRODUCTION RECORDS

During the 1950's, farm output increased faster than the population

by Rex Daly

AMERICAN farmers last year produced a record output. The total for crops and livestock in 1960 was 29 percent above the country's 1947-49 average.

This volume equaled that of Mainland China and was almost 60 percent larger than that of the Soviet Union —the world's two other largest agricultural producers.

On a per capita basis, U.S. output was twice that of the Soviet Union and four times that of Mainland China. It equaled the per capita volume of Canada, but was about half that of Australia and New Zealand.

World output itself set an all-time record. Increases in the U.S., Western Europe, Western Asia, Africa, Australia, and New Zealand offset much of the decreases in Latin America, the Communist Bloc countries, and the Far East.

Record production in the United States was accomplished with 30 percent fewer workers and some 5 percent fewer acres of crop land than in 1947-49. Yields per acre for field crops increased 43 percent.

The output of wheat, for example, rose more than 20 percent in the past decade and a further gain in wheat and feed grains have added to already burdensome grain stocks. Cotton output was about equal to domestic use and exports.

Together, these three crops accounted for nearly half of the total acreage planted in 1960.

Production of livestock products in 1960 was nearly as large as the record outturn of 1959. Increases in beef, milk, and poultry about offset a reduction in hogs and eggs.

An increase in the index of per capita food consumption over the past decade reflects a shift to an "improved diet" of high-protein foods and processed fruits and vegetables rather than more pounds of food. On the average, people were eating about 80 pounds—5 percent—less food in 1957-59 than 10 years earlier.

An increase in meat consumption of about 20 pounds per person and a sizable gain in processed fruits and vegetables was more than offset by a continued decline in cereals, potatoes, and some fresh fruits and vegetables. Dairy products (other than butter), fats and oils, and sugar held relatively stable.

Agricultural exports rose sharply in the 1950's. Government programs, including in recent years Public Law 480 sales for foreign currency, have aided materially in this expansion. A continuation of Government export programs and the "Food for Peace" effort is expected to result in continued large exports of grains, cotton, and fats and oils.

The domestic market for food and fiber also will increase as our population grows and, to some extent, as consumer incomes rise and tastes change.

If diets continue to change as much as they have during the past 10 years and if our population again expands some 15 to 20 percent between 1960 and 1970, food and fiber requirements at home may increase a fifth or more.

Farm output will continue to rise to meet the expanded requirements of the coming decade. During the 1950's, output increased faster than population (27 percent compared to 19 percent), resulting in big accumulations of wheat, feed grains, and cotton.

With greatly expanded productive capacity, farm output will likely continue to rise more rapidly than population, barring poor growing conditions or adjustment programs which limit production.

At the same time, farmers will further increase the size of their holdings; farms will become more mechanized; and fewer workers will be required to produce the larger output.

The author is Chief of the Farm Income Branch, Agricultural Economics Division, Agricultural Marketing Service.

VIA NOGALES

New truck compound at edge of Nogales speeds rapidly increasing volume of truck shipments through inspection. From here, produce moves to markets all over U. S.

Mexican-grown winter produce for U. S. markets gets Federal-State inspection at this southwestern border town

by Don Matheson

TUCKED into a narrow valley between the foothills on the Arizona-Mexican border, the town of Nogales is the main port of entry for fresh produce from western Mexico into the United States.

A new paved highway and the Ferrocarril del Pacifico railway run parallel routes into Nogales from the south, bringing traffic up from the western coast of Mexico. On the American side, U.S. Route 19 and the Southern Pacific Railroad link Nogales with Tucson, 65 miles to the north.

Nogales' strategic location on transportation routes makes it a boom town in the winter months. From December through May, fresh produce grown on the subtropical coastal plain of Mexico moves across the border here to supply markets in the United States and Canada.

The author is Assistant Chief of the Fresh Products Inspection and Standardization Branch, Fruit and Vegetable Division, AMS.

Much of this Mexican produce carries Federal-State inspection certificates when it crosses into the United States. The Federal-State inspection service keeps as many as 20 of its inspectors at Nogales during the peak of the season.

This "at-the-border" operation was begun in 1926 when Northerners buying Mexican produce wanted information on quality, condition, and grade. Inspection service was made available on a voluntary basis.

In recent years inspection has become much more extensive, partly because of U.S. import regulations on tomatoes and cucumbers. Authorized under the terms of the Agricultural Marketing Agreement Act, these import regulations—which include compulsory inspection—were first imposed on tomatoes in 1956. Similar regulations were applied to cucumber imports for a 2-year period.

But even when the regulations were suspended, Mexican growers and shippers were so sold on the marketing advantages of inspection that they've continued to pay for the service on a voluntary basis.

CAADES (the association representing the fresh produce growers in the Mexican States of Sinaloa and Sonora), which the Mexico government has authorized to regulate the shipment of produce, now requires inspection of all tomatoes, cucumbers, and watermelons. These crops make up the bulk of the Mexican trade.

The hurried pace of the inspection operations at Nogales contrasts with the easy-going air of the Mexican city. A season's inspections at Nogales average 15,000 carlot equivalents—more than double the volume of official produce inspections at the New York City terminal market for a whole year.

In the rail inspection yards just south of the customs houses, produce arrives for inspection in solid trainloads, some of them 100 cars long. At the peak of the season, 300 carlots may arrive on a single day, and in-

spection delay means costly spoilage.

Mexican workers, directed by the inspectors, scramble into the cars and spread out samples from each. The inspectors follow close behind for the actual grading.

Out on the edge of town, CAADES has built a new truck inspection compound to handle the rapidly increasing volume of truck shipments.

A thriving trade in trellis-grown tomatoes has developed in the last few years. Unlike the mature-green tomatoes which are usually shipped by rail, these trellis-grown tomatoes are left on the vines until some red color has started to develop. Then they're rushed to market by truck. Several other vegetables and melons also are being shipped by truck.

All morning, Mexican trucks pull in to the CAADES compound with trailers loaded the day before at Culiacan, Bamoa or some other shipping point, 700 miles to the south. The trailers are backed into the covered inspection platforms and the tractors unhitch and head south again. Waiting American tractors rush the inspected trailers through customs and plant quarantine checks.

The trailers are usually hauled to one of the 16 plants operated by importers on the American side of Nogales. These plants are equipped with refrigeration facilities and large docks for unloading and re-assembling.

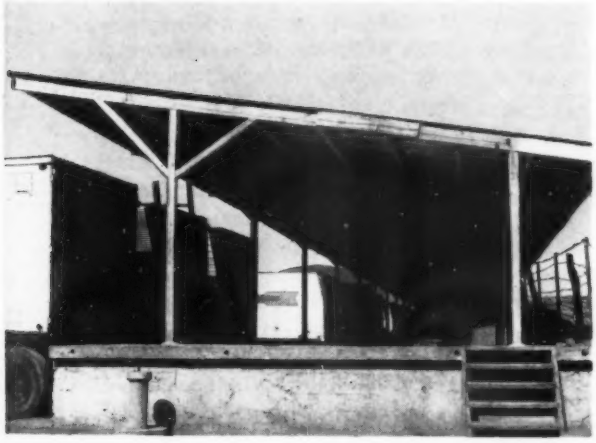
There, the tomato cargoes are unloaded and separated according to maturity and quality. The more mature tomatoes are sent to markets in California and other nearby western States; the rest head for more distant markets.

In spite of the hurry surrounding the inspection operation, the atmosphere is friendly. A strong working relationship has been built up with the Mexican authorities, and this is mainly responsible for the efficiency and speed of the inspection system.

The inspectors at Nogales look at only the top layers of most of the railcars, instead of unloading all the cars in a long train. "Plating," the practice of loading a car with the best produce where the inspector will see it, formerly was a problem. This has been corrected by completely unloading a few cars each day as a check, and by rechecking other cars for uniformity at their destination.

If a shipper is found plating his cars, CAADES may impose stiff penalties. It may require, for example, that each of his cars for the rest of the season be unloaded for inspection—at his expense. Plating has almost ceased as a result.

This close cooperation between the Federal-State inspection service and the Mexican authorities has made inspection practical at this border point and made it possible to supply accurate information for the buyers of this produce. ■



Trailers are backed up to inspection docks; tractors then unhitch and head south for another load. Waiting U. S. tractors shepherd trailers through customs, plant quarantine checks.

SPRING PIG CROP POINTS UPWARD

IT LOOKS like there'll be more pigs this spring than last. At least, that's what the spring pig crop report of USDA's Crop Reporting Board indicates.

The report, based on a survey of farmers' intentions, predicts slightly over 7 million sows will farrow from December 1960 through May 1961. This would bring the spring pig crop to just under 50 million head—about 5 percent more than that of the spring before.

The pig crop for all of 1960 totaled nearly 89 million head. The spring crop was slightly over 47 million pigs, and the number of pigs saved during the fall is estimated at almost 42 million. Last year's total, however, is 11 percent less than the year before.

In ten selected Corn Belt States, farmers' plans indicate that 6 percent more sows will farrow in the spring of 1961 than a year earlier. These States—Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, South Dakota, Nebraska, and Kansas—accounted for about three-fourths of the 1960 spring pig crop.

The Crop Reporting Board's survey shows that in these States the number of all hogs and pigs on farms December 1 totaled nearly 47 million head, 3 percent less than a year earlier. Hogs six months and older declined 7 percent, but pigs under three months increased 7 percent.

The 1961 rate of hog slaughter is expected to stay below 1960 until about midyear, when marketings from the late 1960 fall farrowings will begin.

Although hog prices will advance seasonally this summer, they will probably not average much different from last summer. And if the spring crop turns out no larger than now seems likely, the seasonal price decline this fall should be about usual for that time of year.

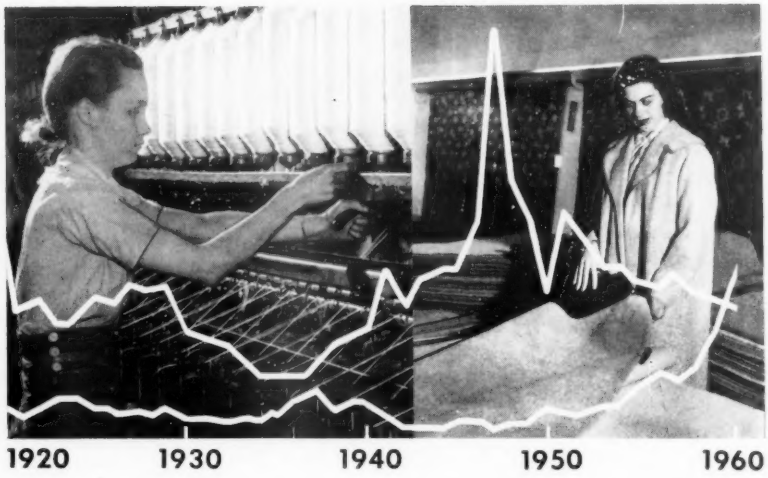
For the First Time on Record U. S. Imports of

COTTON GOODS

Larger than Exports

by Frank Lowenstein

The lines representing cotton imports and exports crossed for the first time last year when the U. S. imported more cotton goods than it exported.



LAST YEAR, for the first time since USDA started keeping cotton statistics, imports of cotton goods exceeded exports.

Preliminary figures for 1960 show imports increased 64 percent to a new high of about 566,000 bale equivalents. Exports stood at approximately 522,000.

Wool imports also were up, and exports down.

AMS economists found neither of these events particularly surprising. Ever since 1949, they have seen cotton imports steadily increase.

It was not, however, until 1960 that the increase became so sharp. Then, in a single year, the import of cotton goods jumped 200,000 bales.

While all this was happening to imports, exports were following an up-and-down pattern. These tended to fluctuate more with the times—good times meant high exports; depression years, not so high. And in the end, today's exports total little more than they did 40 years ago.

In the 1920's when record-keeping was first begun, the export of cotton manufactures ran about 511,000 bales. A general upward trend followed until the depression years of the thirties, when exports dropped sharply. However, they recovered in the post-World War II years until by 1947 they had reached a peak of 1,580,000 bales.

But since this point, exports have trended downward until last year they were pretty nearly back to the level of the 1920's.

This picture of imports and exports is probably more accurately portrayed in the change in consumption. To arrive at what the statisticians call "domestic consumption," the fiber equivalent of exports is deducted from mill consumption and the fiber equivalent of imports is added.

And for an even more precise designation, population growth is taken into consideration and consumption is put on a per capita basis.

For cotton, mill consumption per capita has dropped nearly 7 pounds since the end of World War II—from 30.5 pounds in 1948 to 23.8 in 1960. But, because of the increase in imports and the decline in exports, "domestic consumption" is down only about 3 pounds—from 27.5 pounds in 1948 to 24.1 pounds in 1960.

All of the wool statistics for 1960 aren't in yet, but it looks like about 134 million pounds of manufactured wool came into this country last year. This total is only a little more than the 127 million pounds imported in 1959, but well above the 1949-59 average of 81 million pounds.

Most of the 1960 increase was in rugs and carpets, whose import total rose about 20 percent.

At the same time wool imports were going up, exports were going down. The 10-year average of 1949-59 was 6 million pounds; in 1959, exports totaled 5 million; in 1960, a little more than 4 million.

In terms of raw wool content, imports of wool manufactures have exceeded exports nearly every year since 1920. The only exceptions were the war years of 1943-47 when exports annually averaged 40 million pounds more than imports—the result of Lend-Lease and other Government and private aid shipments.

Like cotton, the domestic consumption of wool per capita is down—from 4.2 pounds in 1948-49 to 3 pounds in 1960. A drop of 30 percent.

Mill consumption decreased even more—a whopping 40 percent, from 4 pounds per person to 2.4 pounds.

The author is Head of the Cotton and Other Fibers Section, Agricultural Economics Division, AMS.

CONVENIENCE FOODS

Come to the Factory

Ninety-nine percent of food served in factory eating places has received some previous kitchen service.

by Rosalind C. Lifquist

FOOD that requires little additional handling, or only heating, now accounts for 60 percent of the money spent for food by cafeterias and other eating facilities in factories in the United States.

This is what AMS economists found when they made a nationwide survey of mass-feeding operations in factories with 250 or more workers. Their study covered a four-week period in January-February 1956.

Although food expenditures may have changed since the survey, it is likely that the proportion spent for major commodities has remained fairly constant.

Kitchen services performed by wholesalers for the cafeterias include everything from such standard functions as cleaning and sorting vegetables, canning, freezing, or baking food, roasting and grinding coffee to combining items for complete entrees.

The more highly processed foods are frequently singled out as higher priced items. However, research shows that since 1939 these have risen in price at about the same rate as foods with a limited amount of processing.

In some instances, highly processed foods cost less than the fresh product. For example, dried eggs and nonfat dried milk are cheaper than fresh eggs and fluid milk.

The smaller the factory, the more frequently it purchased ready-to-serve items. Mobile units supplied only 2 percent of the hot soups, meat dishes, vegetables, sandwiches and salads eaten by factory workers. Vending machines sold mostly soft drinks, candy, and peanuts.

During the four-week period of the AMS survey, factory food facilities used $20 million worth of food—only 1 percent of which had not received some previous kitchen service. Bakery products made up three-fifths of the more highly processed foods purchased by the cafeterias.

Factory food services spent a larger share of their food money for "convenience" foods than urban families. City homemakers preferred a greater proportion of fresh food to canned or frozen foods than did factories.

About half the money spent by factory food services was for items with a minimum of processing—such as fresh milk, fresh meat and vegetables, flour, sugar, and coffee.

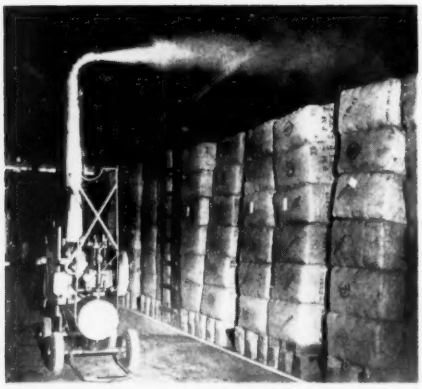
The rest went for the more highly processed foods, which include frozen green peas, butter, margarine, canned tomatoes, and bakery products.

Twice as much was spent for canned foods as for frozen foods.

As long as factories (and their cafeterias) expand, new ones are built, workers' income levels remain high, and the general population increases, sales of convenience foods should continue to rise.

Mobile units supply 2 percent of the hot soups, meat dishes, vegetables, sandwiches, and salads eaten by factory workers. Vending machines sell mostly soft drinks, candy.

The author is a food economist in the Marketing Economics Research Division of AMS.



Space sprays, aerosols help control insects in storage. Here, AMS researchers test each type.

Coated paper bags offer good protection against insects. Bag treated with insecticide is shown on left.

WAR AGAINST INSECTS

by Victor P. Keay, Jr.

AMS scientists are waging war against the insects that infest food, feed, seed, and fiber

A FEED company was getting complaints from farmers who were finding insects in the product.

The feed was packaged under the most sanitary conditions—with hardly any chance for bugs to get into the bag at the plant. Yet there they were when the farmer received the feed.

Officials from the company brought their problem to the Savannah, Ga., Stored-Product Insects Laboratory of the Agricultural Marketing Service.

Here, scientists placed packages of the feed in a room filled with hungry insects. After several days the bags were full of bugs. They had entered via small openings where the bags were stitched.

Because the scientists were able to suggest a new closure method, one proven effective in earlier research, the feed is moving to farmers in better condition.

This is typical of how AMS scientists, in cooperation with private manufacturers, farm groups, and other Government agencies, are waging war against the insects that infest our food, feed, seed, and fiber.

This photo shows how well EQ-53 protects woolen items. The right half of sweater was treated; left was not. This is after 30-day exposure to moths.

The scientists could not have picked a more persistent enemy. Marketing researchers say some insects can eat through tin foil packages coated on both sides with asphalt. And there are about 14 major kinds of stored-product insects—all of them anxious for a good meal.

If it were not for modern methods of insect control and prevention, many, if not most, of our modern convenience foods (such as cake mixes and other cereal products) would be difficult to market without heavy insect infestation.

Checked More than 1,000 Chemicals

In the past six years entomologists at the Savannah laboratory have checked the effectiveness of more than 1,000 chemicals. As a rule, each compound is tested as a contact spray, surface spray, and fumigant. Not many pass through this battery of tests to become first-line weapons in the battle of the bugs.

One that did is EQ-53, an effective, economical, and easy-to-use material for treating washable woolens. EQ-53 added to the wash or rinse water protects woolens against insect damage for at least a full season of storage.

Also, thanks to AMS research, we know which of a large array of insecticides can best be used to fight clothes moths and carpet beetles. These include DDT, TDE, dieldrin, chlordane, lindane, methoxychlor, malathion, heptachlor, diazinon, perthane, and strobane.

Research on insect-resistant packaging has already produced useful information for the food industry. It helps get candies, nuts, and other items to the consumer without bugs getting at them first.

These are some accomplishments of the past. Scientists at the Savannah lab are now working on ideas that are far more ingenious.

Insects catch diseases just like humans. So, AMS entomologists are seeking ways to make bugs sick with a disease that does not affect humans or animals. Early testing on bagged feed shows great promise for this method, although the work is still highly experimental.

Use of Radioactive Materials

Atomic energy also presents new ways to control insects in the marketing system. Previous work on insect control in farm production has shown that the reproductive capacity of insects can be impaired by exposure to radioactive material.

Another preventive measure just over the horizon is to coat packaging materials with chemicals that repel insects. Several chemicals look good enough for further testing. An advantage of this type of treatment is that repellents often are not toxic to humans. Thus hazardous chemical residues can be avoided.

Although much progress has already been made in studies on package construction, there is promise of more to come. The material from which a package is made is just as important as the way it is put together. Some materials, for instance, are better at keeping bugs from getting into our food supply than others.

All of these phases of combat are of interest to the entomologist. And his interest does not end in the laboratory; it extends into actual use.

Full-Scale Field Testing

Once a promising new treatment is developed at the Savannah lab, it is sent to one or more of the seven other stations of the Branch for development of practical applications and for full-scale field testing. This may involve testing with a wide variety of products—grains, flour and other cereal products, dried fruits, seed, animal feed, nuts, textiles, dry milk, cheese, or even stored tobacco.

Field stations experiment with the new treatment under conditions of actual use—in a grain elevator, warehouse, flour mill, or food processing plant.

Finally, when the information which started as just another test at the Savannah lab is fully developed and perfected, it is made available to farmers, industry, and consumers —another weapon in the war against man's eternal enemy, the insect.

The author is an information specialist in the Marketing Information Division of AMS.

REDUCING PELLETING COSTS

by Carl J. Vosloh, Jr.

IS PELLETING profitable for feed manufacturers? This question leads directly to several others: How efficient is pelleting equipment? What does the operation generally cost? And what should it cost?

AMS economists worked out the answers by setting up a model pelleting operation on paper, and by surveying feed producers and feed machinery manufacturers throughout the country.

The AMS model was designed to process approximately 3,900 tons of pellets and 3,900 tons of crumbles a year. It could be operated by one man, the same as a small or medium-sized formula feed plant.

When working at full capacity and with pellets and crumbles selling for $2.50 per ton above the mash price, the plant earned a $1,500 profit.

Operating costs of the model plant were slightly over $18,000. Labor was the largest item—28 percent of the total. Electricity followed closely, accounting for another 26 percent.

When the pelleting plant operates at half its annual capacity, labor costs rise to 35 percent of the total costs. This figure can, however, be lowered if the workman is given something else to do in slack intervals.

The cost of pelleting also includes interest, depreciation, replacement, maintenance, and steam.

In both cost and production, the economists' model compared closely with the average small plant in industry. Small commercial mills in the survey mixed about 11,000 tons of feed a year; the model mill handled 12,000 tons. Both pelletized about 68 percent of their total output.

The model plant required the income from the first 6,700 tons of pelleted output to meet operating costs. Only on the amount over this figure did it make any money from pelleting.

This rule-of-thumb also seems to apply to commercial mills with a one-man pelleting department. Once the 6,700 breakeven point is reached, operational expenses are met.

So, the most obvious way to reduce per unit pelleting expenses is to increase the proportion of feed that is pelleted—providing increased sales can be made at the $2.50 extra charge.

A mill processing 8,000 tons of feed a year has to pellet about 83 percent to meet pelleting expenses (assuming one man spends all of his time in the pelleting operation). But a mill with a 14,000-ton volume requires only 48 percent to cover its operating expenses.

Another area where most plants can increase their efficiency is in the use of labor. In plants with a volume of 25,000 tons of mixed feed, one man can handle two pelleting units at the same time.

And, regardless of the size of the operation, a properly engineered and designed plant can save money. According to the AMS survey, much of the feed industry's pelleting machinery seemed larger than necessary.

For instance, the AMS model used one 75 hp. mill, but equivalent plants in the survey used an average of two 50 hp. and one 30 hp. mills to achieve the same production.

Boiler equipment also tended to be too large. While the AMS model operated with a boiler capacity of 40 hp., feed plants of the same size used one or two boilers from 15 to 100 hp.

Some feed plants went to the opposite extreme; they had too little or too small equipment. Frequently, one scalper instead of two was used to remove the fine material from pellets and crumbles.

Some feed producers also were handicapped by small crumblers. Despite manufacturers' recommendations of a 6 x 60-inch machine, most plants used 6 x 36-inch crumblers.

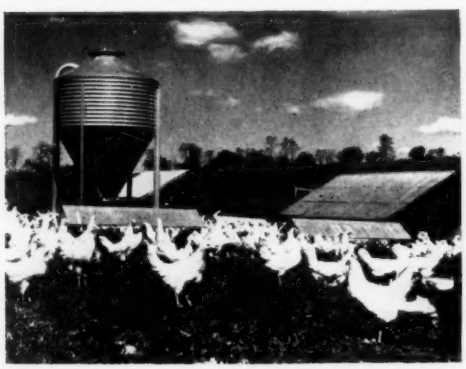
These were the problems most easily recognized and solved. Several others offer no ready solution. One especially annoying bottleneck is the shortage of bin space. Another is the time it takes to change from one feed formula to another.

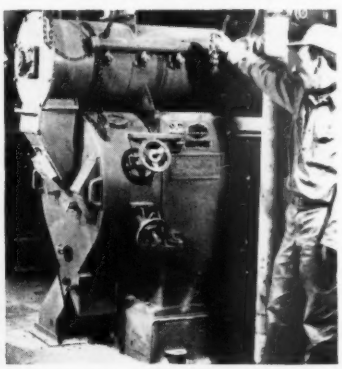
The growth of the formula feed industry has been so rapid that efficiencies of operation have not always kept pace. Management sometimes fails to realize that the "efficient plants" of a few years ago are no longer efficient.

To maintain a competitive position in today's feed industry, manufacturers need to employ up-to-date production techniques and equipment, operate at peak efficiency, and keep a constant check on costs and returns.

The author is an agricultural economist in the Marketing Economics Research Division of AMS.

Growing popularity of pelleted feed caused AMS researchers to examine cost of pelleting operation.





sour cream BOOSTS DAIRY SALES

by Edward J. McGrath

SOUR CREAM, a small-change item for most dairy men, shows promise of big dollar potential with aggressive marketing. Sales increased from 73 million pounds in 1957 to about 100 million in 1959. And preliminary data for 1960 indicates another good year for this dairy product—sales up about 25 percent.

Although sour cream is by no means a new product, its merits have been somewhat overlooked while dairymen concentrated on production and sales of milk, butter, sweet cream, cheese, ice cream, and other standard dairy items.

In 1957, for instance, sales of sour cream provided less than 1 percent of the income of some 2,600 distributors and processors queried in a national mail survey by AMS economists. Sales amounted to less than a half pint per person, with chain outlets handling two-thirds of the sales and independent dealers distributing the rest.

Sour cream was most popular among people in the Middle Atlantic States. They used twice as much per person as the average American and accounted for half the total national sales in 1957. Westerners also had a little bigger appetite for sour cream than the rest of the country; they used another fifth of the annual production. Greater availability of sour cream and the presence of ethnic groups accustomed to the product combined to boost sales in city areas.

According to the AMS survey, dealers in some areas of the country did not even carry sour cream. Or, if they did carry it, they stocked limited amounts for those customers who asked for it. Not surprisingly, most housewives were unacquainted with the merits and use of sour cream and relied on other dairy products for cooking, baking, salads, or desserts.

The holes in the national sales pattern were largest in rural areas, in New England, and in the South. Oddly enough, what little sour cream Southerners did buy was purchased in January and February when sales sagged in the rest of the country. June and December were the peak sales months for the rest of the Nation.

But dairymen were not going to let a good thing go to waste. Most of the firms surveyed in 1957 planned greater promotion outlays to sing the praises of sour cream. And dealers who didn't sell it planned to add it to their lists. At the time of the survey, 24 percent of the dealers who did not carry sour cream said they intended to include it in future distribution.

With the help of promotion to educate the customer, sales began moving upward fast enough to convince dealers they had something big. About 80 percent of the chain outlets and 43 percent of the independent dealers advertised sour cream, mostly by distributing leaflets from door to door. Newspapers, radio, and in-store demonstrations also were used.

As a result of these efforts, sales in 1959 were up 26 percent over the 1957 total. Southern dealers had even more reason to be cheered by the progress of sour cream; sales in their region rose 32 percent.

Now that dealers are catching on to the sales possibilities of sour cream, some are pushing sales by glamorizing the name. Sour cream is appearing under such names as Cream Dressing, Devonshire Cream, Hampshire Cream, or Salad Cream.

Under whatever alias, sour cream should offer a helpful assist to the industry by increasing dairy sales as a whole.

The author is a staff member of the Market Development Research Division of AMS.

IMPROVED INVENTORY CONTROL SYSTEMS

for produce warehouses

by Arnold L. Lundquist

LARGE or small, a wholesale produce distribution business needs to keep its inventory moving smoothly and rapidly. How this is done depends upon the size of the operation.

AMS researchers recently evaluated several methods of recording sales orders and keeping inventory. One of these was particularly well suited for the large distributor. With slight modifications, it also could be used effectively by the small operator.

For each, it offered several definite advantages:

- Fewer out-of-stock situations,
- Better merchandise turnover,
- Less spoilage,
- Lower capital requirements.

The author is a marketing specialist in the Transportation and Facilities Research Division, AMS.

For the large integrated produce distributor, these advantages are obtained through the use of a visual checkboard on which every item of merchandise in the warehouse is listed by code, cost, inventory, and recap.

The checkboard covers one wall of the office. Salesmen, seated at telephones before the board, can see at a glance the merchandise on hand as well as possible substitutions.

Customers order by code and quantity from a weekly price list. Calls are made on a prearranged schedule, which allows for good public relations but no "visiting."

When an order comes in, the salesman immediately passes it to a clerk who makes the adjustments on the board. If the stock of any item is low, the salesman may call out his order as he receives it so other salesmen are kept up-to-date and no one oversells.

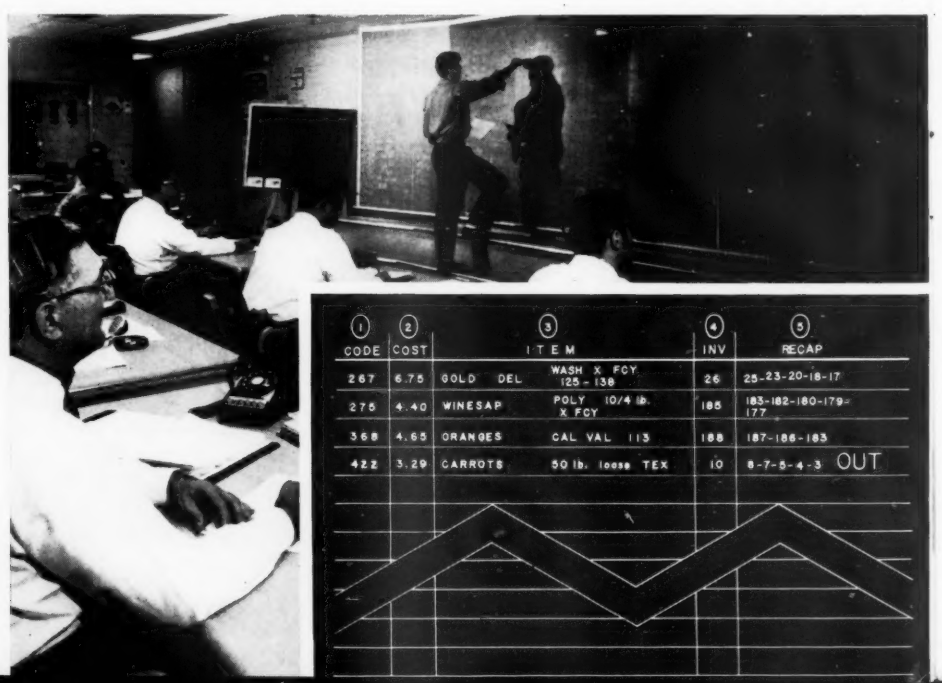
The clerk indicates "out-of-stock" items by marking them OUT in colored chalk.

After an order is deducted from the board inventory, it is sent to the tabulating department for processing. Each day this department forwards its record of the inventory to the produce office and the head merchandiser-buyer.

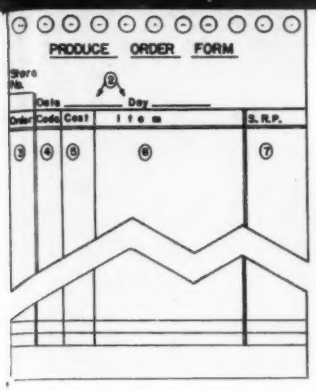
Discrepancies are settled by an actual count of the merchandise. A complete physical inventory is taken each week.

The visual checkboard—

- Reduces cost of obtaining orders nearly 80 percent (from an estimated $1.70 per sales visit to approximately 35 cents for a phone call),



Visual checkboard allows large produce distributor better control of his operation. Salesmen seated in front of the board know exactly what merchandise is on hand and the substitutions they can offer.



AMS research men adapted the visual checkboard for the small operator with a 1- or 2-man operation. Each salesman has his own inventory control sheet and order forms attached to pegboard.

- Assists buyers when ordering replacement stock,
- Helps keep slow-moving items from backing up,
- Highlights special "deals,"
- Prevents overselling,
- Speeds up customer service,
- Is less costly than making a daily count of merchandise in the warehouse.

Its chief disadvantage is that it requires a clerk to tend the board during order taking—about 3 or 4 hours a day.

This same system of check-and-balance has been adapted by AMS researchers to the smaller warehousing operation. Instead of using a central checkboard, the salesman is given an inventory control sheet and order forms. He attaches these to a pegboard before starting to call his customers.

The items listed, the line spacing, and the number of lines on the two forms are identical so the order form can be overlaid on the inventory control sheet. Items are ordered in the same sequence as they appear on the sheets.

After an order is taken, the salesman removes the order form from the pegboard and positions a blank form to the right of the last-used column. This procedure is repeated until the control sheet is completely filled or all customer calls have been made by the salesman.

Because this system is specially adapted to the small operator—with no more than two salesmen and no visual checkboard—stocks in low supply are simply called back and forth. When an item is completely sold out, both men then mark it OUT on their inventory sheets. They do this with a different colored pencil so there's no chance of overselling.

For complete effectiveness, certain other basic rules must be followed. (1) All orders must be taken on the telephone. (2) Produce that is on order from growers and brokers must be added to the inventory on the day it is scheduled to arrive at the warehouse. (3) Sales must be made assuming this merchandise is in stock.

Repack items appear on the inventory sheet as separate units. A unit is the quantity convenient for customers to handle in their retail operation.

For example, green bell peppers are received in the warehouse in bushel quantities, but they are usually sold in 5-pound units. This merchandise should be converted to repack units before it is added to the control sheet inventory.

This system of order taking and inventory control works well for the small produce wholesaler who seeks a smoothly moving warehouse operation. It has many of the same advantages as the visual checkboard plus some of its own. The individual inventory control sheet—

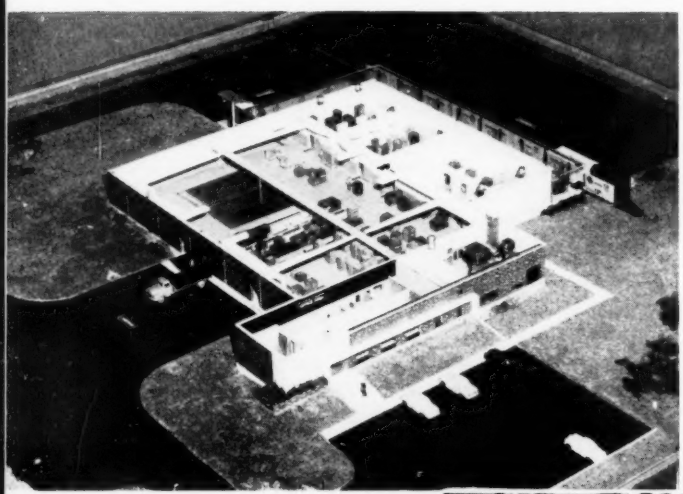
- Helps the distributor establish and maintain a reputation for quality merchandise,
- Assists the buyer when he orders replacement stock,
- Alerts sales personnel to slow-moving items in the warehouse,
- Permits the salesman to suggest substitutions,
- Provides a "remarks" column for special comments.
- Reduces the size of the physical inventory of merchandise in the warehouse,
- Provides a basis for historical records for future merchandising efforts.

Also, it requires no additional printed invoices and may be used either with or without automatic tabulating equipment.

So, both the small and the large wholesaler can benefit from these methods of order taking and inventory control. The advantages are many; the disadvantages few. Because they keep close tab on merchandise inventory, speed up order taking, and reduce paperwork, they make the produce warehousing operation considerably more efficient—and produce moves at less cost to the distributor, retailer, and consumer.

by Robert K. Bogardus

layouts and designs for WHOLESALE PRODUCE WAREHOUSES



PLAN FIRST, then build.

That's the advice Agricultural Marketing Service industrial engineers give to service wholesalers who are thinking about constructing new facilities or remodeling old facilities.

For those who want specific instructions and a lot of good building tips, AMS has put out three sets of economy-oriented layouts for wholesale fresh fruit and vegetable warehouses. The layouts are designed to move fresh produce in and out of the warehouse more efficiently; they are flexible to enable operators to make adjustments without affecting the efficient flow of produce; and they are fully detailed.

The drawings include site plans, floor plans, sections, and elevations. They will help you size up what you've got and determine what you want.

Having a good layout in mind will help you in thinking about such problems as kind of handling equipment to use, volume to be handled, seasonal variations, maintenance of quality, refrigeration capacity, and humidity control.

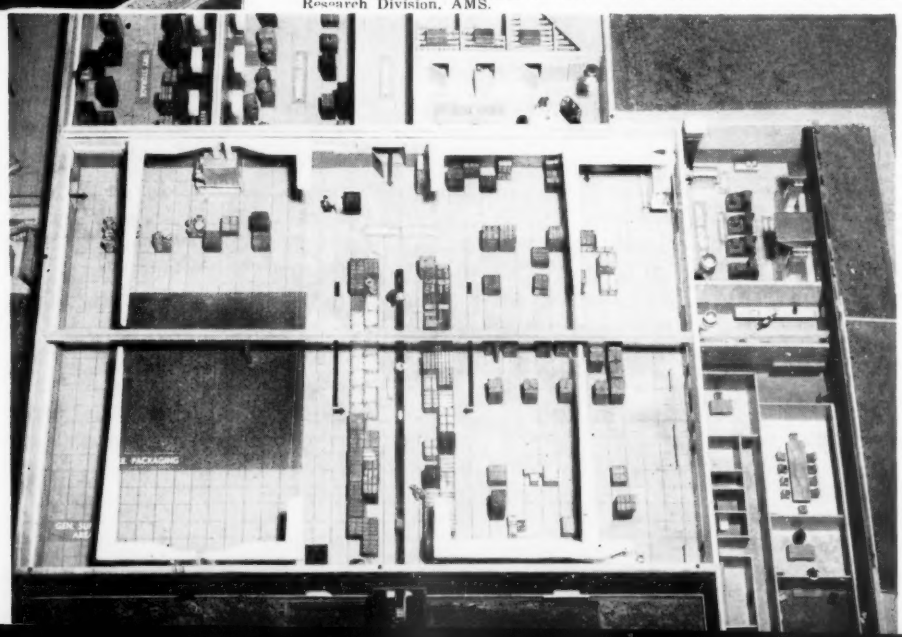
For maximum efficiency and cost savings, the AMS layouts are designed to provide:

- Maximum use of space
- Direct flow of merchandise
- Flexibility of space
- Maintenance of product quality
- Future expansion
- Maximum use of equipment

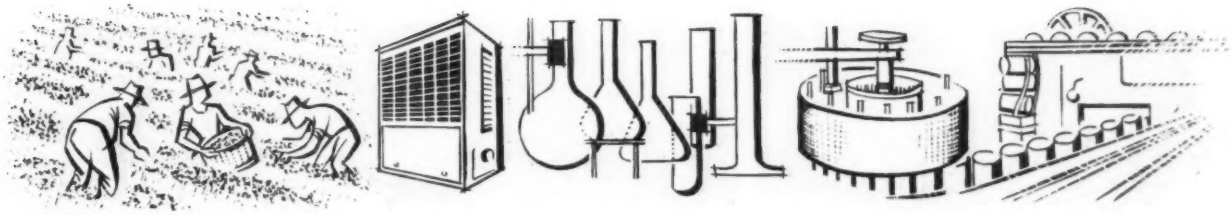
The AMS designs are suitable for three different types of climates—that of Cincinnati, New Orleans, and St. Paul-Minneapolis.

A free copy of the report with layouts may be obtained from the Office of Information, USDA, Washington 25, D.C.

The author is an industrial engineer in the Transportation and Facilities Research Division, AMS.



Photographs of model show interior, exterior views of AMS-designed building. Notice access by both truck and rail, ample parking area.



The Changing Market

Science Helps Food Industry

Science is helping the food industry by developing new products and lowering costs in our food processing plants.

The number of scientific and technical workers in contrast to production workers has increased during the past 10 or 15 years. According to National Science Foundation surveys, some 15,400 scientists and technicians were employed in food manufacturing companies in 1959. About 4,700 were engaged in research and development activities.

About 6 percent of the food processing companies financed their own research and product development in 1953 in addition to benefiting from research activities of other industries, Government, and institutions.

Expenditures for research and development in the food processing industries amounted to about 0.3 percent of net sales in 1957.

The extent of these efforts was directly correlated with size of the company; more of the larger companies conducted research activities than did smaller companies. Of those companies with 5,000 or more employees, almost 90 percent hired scientific employees.

Engineers and chemists were the most numerous of the scientific personnel employed, followed by life scientists, physicists, and mathematicians. Administrative and other supporting scientific personnel also were included.

This is just a partial roster of scientists working on agricultural products. Government agencies, trade associations, universities, independent laboratories, and equipment manufacturers all have their own teams of scientists and technicians working on newer and better products and more efficient methods.

Water Core in Apples

What kind of an apple did Eve give Adam? No one knows, of course. But if it were a water-core apple, it probably proved very tasty.

Some people prefer water-core apples. They say they have a taste advantage—a wine-like, sweeter flavor than other apples.

But, like Adam, AMS scientists at Beltsville, Md., find these apples also have a disadvantage. The trouble is: Water-core apples may deteriorate in storage.

At Beltsville, they are now trying to find ways to tell how much water core exists in an apple (without cutting it) and how this relates to its storage life.

A new piece of equipment has been developed which, the scientists hope, will be able to separate water-core apples from other apples. Preliminary tests have been promising.

Once the water-core apples are successfully separated from the rest of the crop, scientists need only to determine how long these apples can be stored safely.

Water-core apples marketed right after harvest make good eating. But, if the water core is severe, the apples frequently turn brown in storage. Or, worse yet from the marketing point of view, they brown after the consumer buys them.

If the Beltsville sorting device works—and if the scientists can predetermine storage life—marketing of water-core apples will no longer be a problem.

The grower can then ship with confidence; the consumer buy with assurance—knowing these apples will be good eating all the way through.

Storing Fats and Oils

In both Canada and the United States, commercial storage facilities for fats and oils swung sharply upward during the 1950's as export operations more than doubled.

Stimulated by the opening of the St. Lawrence Seaway, facilities at the Great Lake ports showed the greatest increase. Here bulk storage capacity rose from 18,000 tons in 1949 to 831,000 tons in 1959.

Over half of the U.S. commercial storage capacity, however, is still along the Gulf ports. The Atlantic coastal area ranks second in total capacity; then come the Lake ports.

In all, commercial storage facilities for fats and oils in the United States increased from 1.6 million short tons in 1949 to 5.5 million in 1959.

The number of commercial sites increased from 29 to 62 and the number of commercial storage firms from 17 to 36.

Ten of the 26 additional sites, reported for 1959, were in Canada. During the same period, Canada has increased her fats and oils exports

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The Changing Market

from 17 to 413 million pounds (oil equivalent).

Of the 62 commercial storage sites in the United States and Canada, 56 were accessible by water and had facilities for loading and unloading barges or ships. Less than 2 percent of the total storage capacity was located inland.

These facts are pointed up by John W. Thompson of the Marketing Economics Research Division of AMS in an article appearing in the September 1960 issue of the *Fats and Oils Situation.*

Packing California Peaches

California isn't usually considered the "Peach State," yet it produces more peaches each year than all of the other States together.

Because of this, it's important to know how much it costs to pack fresh peaches in California and if these costs can be reduced.

AMS marketing economists have completed a report which itemizes and explains these costs. (See MRR-443, "Costs of Packing California Peaches in 1959," available at the Office of Information, U.S. Department of Agriculture, Washington 25, D. C.)

According to the report, total packing costs of Red Haven and Early Elberta peaches averaged slightly over 70 cents per 20-pound lug. Some sheds packed a lug for as low as 64.7 cents; others found costs running nearly 81 cents a lug.

Labor costs were highest in sheds that used inexperienced packers, had frequent breakdowns of automatic dumpers, and received too ripe fruit that required heavy culling.

A failure to operate at full capacity further boosted packing costs.

When the 70-cent-a-lug cost was itemized, California packers in 1959 paid 41 cents for peach-packing materials, 18 cents for labor, and 11 cents in overhead.

Protecting Seed Corn from Insects

Weevils, beetles, and other bugs of various shapes and descriptions would be beating their wings in despair if they knew about the latest plot being cooked up against them.

AMS scientists, Texas seedsmen, and the paper container industry have joined forces to produce another item in the growing arsenal of anti-insect weapons.

This time it's a chemically treated paper bag that protects seed corn and sorghum from insect infestation.

Although treated bags are still in the preliminary stages of research, some are already on the market. Bags treated with pyrethrum and piperonyl butoxide offer their contents protection up to 9 months.

By using an additional chemical —methoxychlor, a close relative of DDT—scientists have extended the effectiveness of coated bags another year. (Treated bags containing methoxychlor along with the other chemicals are not yet available to the public.)

Such research is but one of many ways in which the Agricultural Marketing Service is helping the farmer and the food industry bring to the consumer a better quality product.

School Lunch Aids Disaster Victims

The Florida school lunch program, a part of the Federal School Lunch Program administered by AMS, last September extended itself beyond the classroom for emergency service.

The facilities of 203 school lunch departments turned to feeding those made homeless by Hurricane Donna. Some 380 school lunch people worked over the weekend, often without sleep, to provide 47,708 meals to storm victims.

These were more than snacks and pick-me-ups. They were full meals. The first breakfast Friday morning included scrambled eggs made from dried eggs, bacon, fruit juice, milk, bread and butter, and coffee. A typical evening meal consisted of pork and gravy, buttered steamed rice, canned fruit, bread and butter, milk, and coffee.

At night, coffee was made available to adults and hot chocolate to the children.

The people who prepared and served this food were all employees of the school lunch program—many of whom had suffered losses themselves.

Growth Through Agricultural Progress